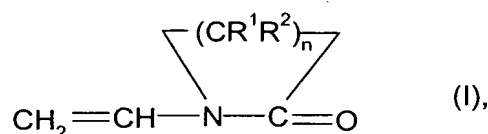


## Claims

1. A process for preparing a water-in-water dispersion of polyvinylactam having a K value of  $\geq 30$  and  $\leq 110$  by free-radically initiated polymerization of at least one N-vinylactam of general formula I



where

$\text{R}^1$  and  $\text{R}^2$  independently of one another are hydrogen and/or  $\text{C}_1\text{-C}_8$  alkyl and  $n$  is an integer from 2 to 8,

in an aqueous reaction medium,

wherein said at least one N-vinylactam I used for the polymerization is composed of at least 50% by weight of N-vinyl-2-pyrrolidone ( $\text{R}^1$  and  $\text{R}^2$  as hydrogen,  $n$  as 3) and the free-radically initiated polymerization of said at least one N-vinylactam I takes place in the presence of

- a) from 1 to 100% by weight, based on the saturation amount in the aqueous reaction medium, of at least one organic or inorganic salt,
- b) from 0.1 to 30% by weight of at least one protective colloid, based on the total amount of said at least one N-vinylactam I used for the polymerization, and
- c) from 0.01 to 3% by weight of at least one free-radical initiator, based on the total amount of said at least one N-vinylactam I used for the polymerization,

and the reaction conditions are chosen so that during the polymerization reaction at least a portion of said at least one N-vinylactam I and of the polyvinylactam formed therefrom by polymerization are present in the form of a separate phase in the aqueous reaction medium.

- 2. A process according to claim 1, wherein the polymerization is carried out using  $\geq 20\%$  by weight of said at least one N-vinylactam I, based on the total amount of the resulting aqueous polyvinylactam dispersion.
- 3. A process according to either of claims 1 and 2, wherein the polymerization takes place by the feed technique.
- 4. A process according to claim 3, wherein at least one portion of said at least one organic or inorganic salt and of said at least one protective colloid and also if

appropriate a portion of said at least one free-radical initiator and/or of said at least one N-vinyl lactam I are introduced as an initial charge in the aqueous reaction medium and under polymerization conditions the remainders if appropriate of said at least one organic or inorganic salt and of said at least one protective colloid and also the entirety or remainder if appropriate of said at least one free-radical initiator and/or of said at least one N-vinyl lactam I are metered in continuously.

5. A process according to any one of claims 1 to 4, wherein the entirety of said at least one N-vinyl lactam I is polymerized to a conversion of  $\geq 90\%$  by weight.
6. A process according to claim 5, wherein the polymerization is completed by metering additionally from 0.05 to 1.5% by weight, based on the total amount of said at least one N-vinyl lactam I used for the polymerization, of at least one free-radical initiator into the polymerization mixture under polymerization conditions.
7. A process according to any one of claims 1 to 6, wherein said at least one N-vinyl lactam I used for the polymerization is exclusively N-vinyl-2-pyrrolidone.
8. A process according to any one of claims 1 to 7, wherein as said at least one protective colloid an anionic or cationic protective colloid is used.
9. A process according to any one of claims 1 to 8, wherein as said at least one salt the salt of an organic  $C_1$  to  $C_{15}$  carboxylic acid is used.
10. An aqueous polyvinyl lactam dispersion obtainable by a process according to any one of claims 1 to 9.
11. The use of an aqueous polyvinyl lactam dispersion according to claim 10 as a component in drug or cosmetic products, in adhesives or heat transfer fluids, or in coating, thickener, adsorber, binder, laundry detergent, plastics, ceramics, refrigerant, ink or pigment formulations.
12. The use of an aqueous polyvinyl lactam dispersion according to claim 10 as a component in a metal quenching bath.
13. A metal quenching bath comprising an aqueous polyvinyl lactam dispersion according to claim 10.
14. The use of an aqueous polyvinyl lactam dispersion according to claim 10 as a component in an adhesive formulation for gluesticks.

15. An adhesive formulation for gluesticks, comprising an aqueous polyvinyl lactam dispersion according to claim 10.
- 5 16. An adhesive formulation according to claim 15, wherein the aqueous polyvinyl lactam dispersion has a polyvinyl lactam solids content  $\geq 25\%$  by weight and the polyvinyl lactam present in the aqueous dispersion has a K value of  $\geq 60$  to  $\leq 100$ .